

Waquoit Bay Area of Critical Environmental Concern (ACEC)

Designation Date:	November 26, 1979
Total approximate acreage:	2,575 acres
Watershed/subwatershed:	Cape Cod/Waquoit Bay
Municipalities (% of ACEC):	Falmouth (48%) and Mashpee (52%)

What makes this area so special?

Designated Habitats

The Waquoit Bay ACEC was nominated by the Conservation Commissions, Boards of Selectmen, and Waterways Committees in the Towns of Mashpee and Falmouth and was designated as an ACEC in 1979 because of the area's extraordinary natural resources. The ACEC boundary generally follows the 100-year floodplain elevation on the landward side of the Bay and mean low water on the seaward side and includes the Waquoit Bay National Estuarine Research Reserve (WBNERR). The entire bay is designated by the state as an Ocean Sanctuary while much of the surrounding upland is also part of the Mashpee National Wildlife Refuge. Important habitats within the boundary include estuarine waters, freshwater wetlands and ponds, shrub and wooded swamps, streams, salt marsh, tidal flats, coastal dunes, and beaches. These areas provide flood control, storm damage prevention, improved water quality, wildlife habitat, and recreation opportunities to surrounding communities.

Wildlife

The diverse and relatively unaltered habitats of this ACEC provide feeding, spawning, and nursery grounds for numerous shellfish, finfish, amphibians, reptiles, birds, and mammals. In 2002, the state's Natural Heritage and Endangered Species Program (NHESP) identified approximately 500 acres or 20 % of the ACEC as core habitat through their BioMap project that highlights areas in Massachusetts with high biodiversity and most in need of protection. That same year, NHESP listed 7 species that were either Endangered (E), Threatened (T) or of Special Concern (SC), including: the Shortnose Sturgeon (E- fish), Mattamuskeet Panic-Grass (E-plant), Diamondback Terrapin (T - reptile), Piping Plover (T- bird), Least Tern (SC- bird), New England Blazing Star (SC-plant), and Bristly Foxtail (SC – plant). American eel, rainbow smelt, blueblack herring, striped bass, trout, and white perch have also been sited in the area. In 2001, the NHESP also certified one vernal pool and located 6 potential vernal pools in this ACEC.

The Quashnet River, which stretches from the Bay to John's Pond in Mashpee, is an important migratory fish run for alewife and trout and is the site of successful restoration efforts. Habitat for soft shell clams, bay scallops, and quahogs can be found within the ACEC boundary according to draft maps made in 2003 by the Division of Marine Fisheries and based on historical information and interviews with local shellfish officers.

Land Use

One quarter of the land within the Waquoit Bay ACEC boundary is forested while approximately 15% of the area is covered by freshwater wetland or salt marsh habitats. The majority of the 770

acres or approximately 30% of the ACEC that is protected open space is owned by the state's Department of Environmental Management and includes Washburn Island and South Cape Beach State Park. Although only 70 acres of land within the boundary has been converted to residential development, a large portion of the land immediately adjacent to the ACEC has a mix of residential areas, especially in the densely developed Seacoast Shores on the west side of the Bay. Because of the high proportion of development near the ACEC, sources of nitrogen entering local waterways from septic systems and lawn fertilizers and their effects on such things as eelgrass beds are being studied by stewardship groups working in the region.

Economy

The economies of Falmouth and Mashpee are tied to this area since local fishing and tourism industries depend on the natural resources in this ACEC. Rich shellfish populations, including soft shell clams, quahogs, and bay scallops, are an important part of the recreational and commercial fishing industry in the Bay. In 2002, tidal areas in the ACEC supported 22 acres of aquaculture lease sites used by one license holder. Residents and tourists are also drawn to the clean waters and beaches for recreational activities such as boating, swimming, walking, and bird watching. Public access is provided at WBNERR and on the town and state owned South Cape Beach.

Archaeology

“Waquoit” is the Wampanoag name used by the Mashpee tribe who originally settled here. The Waquoit Bay ACEC contains nine archaeological sites, with four sites on Washburn Island alone. However, this number greatly underestimates the significant archaeological record around Waquoit Bay because many sites are lumped together on Washburn Island. One discovery of undated human remains from the Island was identified as that of a 30-year-old Native American female, while arrowhead and shellheap evidence can still be found in the area. Although limited, available information suggests that Waquoit Bay was first occupied 9,000 - 8,000 years ago.

Stewardship

One goal of the ACEC program is to promote stewardship of this area's resources through the participation, cooperation, and expertise of many interest groups. The Waquoit Bay National Estuarine Research Reserve provides long-term protection of habitats and natural resources, serves as a natural laboratory for research, and promotes outreach and training activities. The Reserve works with partners to explore solutions to coastal management issues and transfers the information learned to the public and coastal decision makers in the region.

There have been numerous studies, restoration projects, and water quality monitoring conducted by a variety of groups in Waquoit Bay. A collaborative effort between Trout Unlimited and the Massachusetts Department of Fish and Wildlife is helping to restore the Quashnet River and has resulted in a self-sustaining brook trout population. Important studies are investigating the effects of nutrient loading and eutrophication of Bay waters. Other studies have focused on the loss of eelgrass beds, protection of drinking supplies, pathogens in the water, erosion of the coastline and barrier beaches, protection of endangered species, and ecological impacts of boats, docks, and piers.

The Quashnet River, Hamblin Pond, and Jehu Pond were selected in 2001 as priority waterbodies for the *Estuaries Project - Southeastern Massachusetts Embayment Restoration* conducted with collaboration of state agencies, academic institutions, and local municipalities. The goal of the Estuaries Project is to classify the nitrogen sensitivity of southeastern Massachusetts's coastal bays and estuaries. This study will result in the generation of planning and policy guidance

documents to help the communities of Waquoit Bay consider how to improve water quality by implementing nitrogen management strategies.

By becoming active stewards, community members can help monitor the condition, target problems, and find ways to improve and protect the natural resources in their ACEC. If you have any questions or ideas for stewardship in the Waquoit Bay ACEC, please contact the Massachusetts Office of Coastal Zone Management's ACEC Stewardship Coordinator, Katie Lund, at (508) 289-2889 or the Department of Environmental Management's ACEC Coastal Coordinator, Liz Sorenson, at (617) 626-1394. Also see the ACEC website, <http://www.mass.gov/dem/programs/acec> and WBNERR website, <http://www.waquoitbayreserve.org>.

Who are local ACEC stewards?

Waquoit Bay National Estuarine Research Reserve (WBNERR)
WBNERR volunteers
Citizens for the Protection of Waquoit Bay
Waquoit Bay Watchers
Waquoit Association
Falmouth Associations Concerned with Estuaries and Saltponds (FACES)
Trout Unlimited
Coonamessett River Park Coalition

What coastal resources are included (partially or entirely) in the ACEC?

Harbors, Sounds, Bays: Waquoit Bay (*Falmouth, Mashpee*)

Rivers: Childs River, Quashnet River (*Falmouth*)

Lakes, Ponds: Bog, Bourne, Caleb, and Hamblin Ponds (*Falmouth*); Flat, Hamblin, Jehu, Jim, Little Flat, Sage Lot, and Witch Ponds (*Mashpee*)

Brooks, Creeks: Red Brook (*Mashpee*)

Great Ponds (ponds > 10 acres): Jim Pond (*Mashpee*)

Outstanding Resource Waters (ORWs): Waquoit Bay and Hamblin Pond (*Falmouth, Mashpee*); Childs River, Quashnet River, Bog, Bourne, and Caleb Ponds (*Falmouth*); Flat, Hamblin, Jehu, Jim, Sage Lot, and Witch Ponds, Red Brook (*Mashpee*). (*ORWs are waters, such as public water supplies and vernal pools that are protected by the most stringent standards because they constitute an outstanding resource as determined by their socio-economic, recreational, ecological, and/or aesthetic values*).

Barrier Beaches included in ACEC (Massachusetts Barrier Beach Inventory, CZM, 1982): *in Falmouth - on Washburn Island:* beach to west of bay inlet (Fm-1), beach to east of Eel Pond Inlet (Fm-11), areas fronting marshes on east side of island (Fm-7,8,9), beach on west side of island opposite Bayview Drive (Fm-10); *within Waquoit Bay:* mouth of Quashnet River (Fm-3,4), area fronting Caleb Pond (Fm-5), fronting pond south of Waquoit cemetery (Fm-6), fronting Hamblin Pond (Fm-2); *in Mashpee:* South Cape Beach/Dead Neck (Ms-5), beach fronting Flat Pond (Ms-9)

NATURAL RESOURCE ACREAGE ESTIMATES

Note: acreages are estimated using Massachusetts Geographic Information System data (2001).

HABITAT TYPE	ACREAGE in ACEC	% of ACEC	LAND USE	ACREAGE in ACEC	% of ACEC
barrier beach	135	5	recreation	105	4
eelgrass	100	4	agriculture	--	--
salt marsh	280	11	residential	72	3
tidal flat	6	<1	commercial	--	--
freshwater wetland	155	6	industrial	<1	<1
cranberry bog	30	1			
forest	665	26			
open water	1,227	48			
100 yr floodplain	2,105	79			